

Claims

What is claimed as new and desired to be secured by Letters Patent of the United States is:

1. A non-iterative method for identifying signal degradation comprising the following steps:
 - (a) applying a transform to the signal, in part or whole, to represent said signal as a frequency spectrum, said frequency having phase information;
 - (b) applying a power law to the result of step (a) to form a filter function;whereby the filter function or inverse transform of said filter function is used to identify system degradation.
2. The method of claim 1, further including the step of discarding said phase information of said frequency spectrum.
3. The method of claim 1, further including the step of applying a smoothing function.
4. The method of claim 2, further including the step of applying a smoothing function.
5. The method of claim 4, wherein the order in which the claimed steps are performed is changed.
6. The method of claim 1, further comprising the step of using said filter function or inverse transform of said filter function to remove aberrations, improve the quality, or alter the characteristics of said signal.

7. The method of claim 1, further including the step of defining the value of said power law to be a constant of frequency, and determining the value of said power law by calculation, estimate, or guess.
8. The method of claim 1, further including the step of defining the power law to be dependent on frequency, and determining the value of said power law by calculation, estimate, or guess.
9. The method of claim 8, wherein said determining step comprises determining said power law through comparison of said signal with a synthetic or empirical frequency spectrum representative of the desired result.
10. The method of claim 1, wherein said applying step includes applying said transform to a multi-dimensional image or series of images.
11. The method of claim 1, further comprising using a data processor to carry out the previously claimed steps.
12. The method of claims 1, further comprising using a series of electronic circuits to carry out the previously claimed steps.